

NEW AND LITTLE-KNOWN SPECIES OF  
AFRICAN TRICHOPTERA

BY

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*Pp. 1-37 ; 27 Text-figures*

BULLETIN OF  
THE BRITISH MUSEUM (NATURAL HISTORY)  
ENTOMOLOGY

Vol. 6 No. 1

LONDON: 1957

THE BULLETIN OF THE BRITISH MUSEUM  
(NATURAL HISTORY) *instituted in 1949, is  
issued in five series corresponding to the Departments  
of the Museum, and an Historical Series.*

*Parts appear at irregular intervals as they become  
ready. Volumes will contain about three or four  
hundred pages, and will not necessarily be completed  
within one calendar year.*

*This paper is Vol. 6. No. 1 of the Entomological  
series.*



PRINTED BY ORDER OF THE TRUSTEES OF  
THE BRITISH MUSEUM

*Issued December, 1957*

*Price Ten Shillings*

# NEW AND LITTLE-KNOWN SPECIES OF AFRICAN TRICHOPTERA

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THIS paper is based on collections made in East Africa by Dr. N. E. Hickin in 1954 and 1956 and by Dr. P. S. Corbet, 1954-56; in Ghana (Gold Coast) by Professor Lewis Berner in 1950 and upon other small collections made by Mr. Elliot Pinhey and Mr. C. N. Smithers. It includes new species in the families Philopotamidae, Polycentropodidae, Hydropsychidae, Hydroptilidae, Leptoceridae and Lepidostomatidae, in all, seventeen new species. The types of all new species have been presented to the British Museum (Nat. Hist.) by the captors, to whom the author wishes to express his thanks for the opportunity of studying this interesting material.

## Family PHILOPOTAMIDAE

### *Chimarra cognata* sp. n.

(Text-figs. 1-2)

RHODESIA. Victoria Falls, i. 1956, numerous examples, (*E. Pinhey*).

♂ (in alcohol). General colour ochraceous or very pale fuscous. Antennae and palpi pale fuscous. Legs ochraceous. Spurs fuscous, 1.4.4, those of the anterior leg short. Abdomen ochraceous, apex of aedeagus and inturned claws of claspers piceous. Wings pale fuscous, venation much as in *C. intexta* Mosely. (It should be noted that the original figure of the anterior wing of *C. intexta* is incorrect, *Cu*<sub>1a</sub> being accidentally omitted. A corrected figure will be found in Mosely, 1936, *Ann. Mag. n. H.*, (10) 17 : 446, fig. 35.)

♂ GENITALIA. Ninth and tenth segments fused dorsally, ninth sternite with a small, acute process. Tenth segment with two sclerotized lateral lobes, from above sinuous and divergent, from the side slightly down-curved, apices dark brown. Cercus rounded in side view, arising from a thin, plate-like lobe which extends beneath the aedeagus. The latter has a slender stem, and towards the apex on each side is a spatulate, sclerotized lobe, which has a piceous tip. Apex of aedeagus membranous and carrying two fuscous, claw-like spines. Claspers broad, moderately long; from the side the upper margin is elevated about mid-way in a strong claw, directed inwards across the clasper. There is a second acute process arising from the inner surface, mid-way between the incurved claw and the apex.

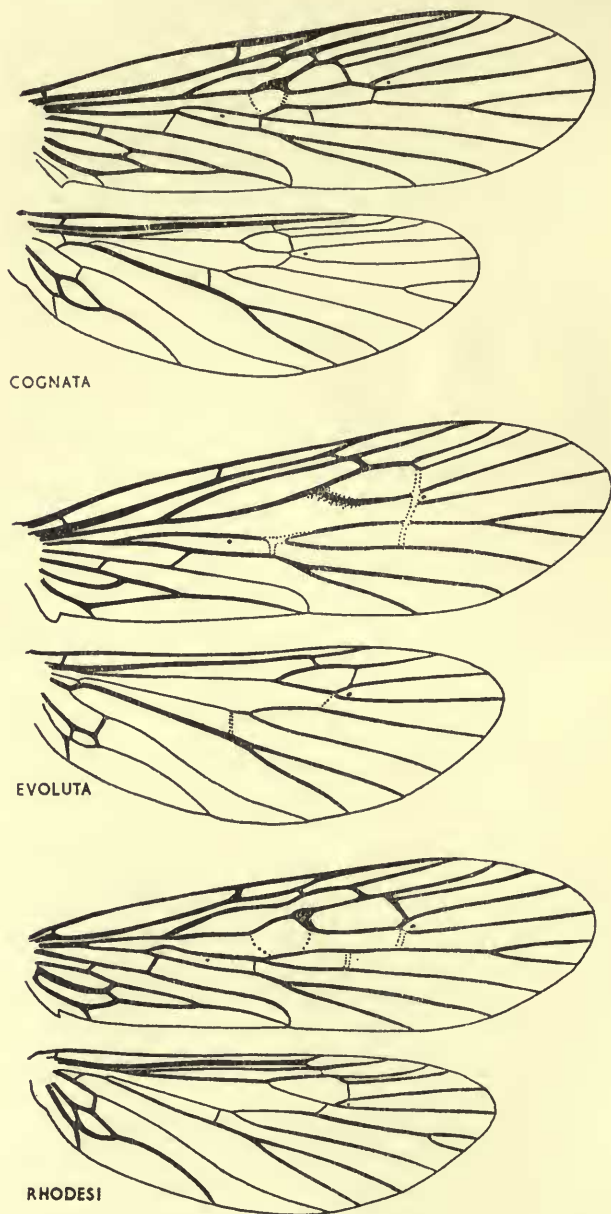


FIG. 1. Wings of *Chimarra cognata*, sp. n., *C. evoluta* sp. n., and *C. rhodesi* sp. n.

♀ GENITALIA. Seventh sternite with a small ventral process. Eighth segment forming an almost complete ring, its dorsal surface membranous. Apical margins darkly pigmented, from the side with a median, hyaline area simulating an excision. Subgenital plate triangular from the side, about as long as eighth segment. From



beneath its lateral margins are convex. Ninth tergite short, saddle-shaped, with two long, basal apodemes.

Length of fore wing, 5 mm.

♂ holotype mounted as microscope preparations, ♀ allotype with abdomen mounted as microscope preparation. Paratypes in British Museum (Nat. Hist.) and National Museum of S. Rhodesia, Bulawayo. This species is closely related to *C. intexta* Mosely from Sierra Leone, as is obvious from a comparison of the ♂ claspers and the wing venation. The general resemblance in ♂ genitalia may well be greater than appears on comparing the figures of the two species. Mosely, in describing *intexta*, states that one superior appendage (lateral lobe of tenth segment) has been broken off in the unique type. I have examined this specimen and I suspect that not only has the tenth segment been rather extensively damaged but the apical part of the aedeagus also appears to be missing. When *C. intexta* is re-discovered, it is possible that *cognata* may prove to be a subspecies of it. For the present, the chief differences in *cognata* are the narrower base of the incurved claw and acute apex of the clasper in side view and the shorter, broader clasper in ventral view.

***Chimarra evoluta* sp. n.**

(Text-figs. 1, 3)

S. RHODESIA. Salisbury Experimental Station, light trap, 1, 3.x.1956, 2 ♂, 5 ♀ (*C. N. Smithers*).

♂ (in alcohol). Head piceous or very dark fuscous, warts and front of head a little paler, and with sparse piceous hairs. Antennae and palpi dark fuscous. Thorax fuscous, with paler warts. Legs fuscous, posterior femur with a paler median ring. Spurs 1.4.4. Abdomen pale fuscous, genitalia piceous. Anastomosis in fore wing straight, whitish hyaline. In hind wing, venation somewhat reduced,  $R_1$  obsolete or fused with  $Sc$ , which is a strong vein, veins  $R_{2+3}$  and  $M_{1+2}$  each unforked (i.e., cells  $R_2$  and  $M_1$  are lacking).

♂ GENITALIA. Ninth segment membranous above, the upper lateral margins each produced caudad in a long, slender spine running alongside the aedeagus. Ventral surface of ninth segment with a small median keel towards the base. Cerci short and moderately broad. Tenth segment forming a pair of stout spines, connected at their bases, situated above and at the side of the aedeagus. The basal half of each spine is produced upwards and outwards in a thin foliate plate, appearing as a lobe in dorsal view, with the spine projecting beyond it. Aedeagus long, slender, lightly sclerotized. Clasper large, in side view somewhat reniform, with its upper basal margin produced upwards and inwards in a broad, thin lobe, fringed with setae. From beneath, the clasper is elongate, with an incurved, tapering, truncate apex. At the base on the inner surface is a slender finger.

♀ (in alcohol). Resembling the male, but slightly larger and darker. Abdomen pale fuscous, terminal segments darker. Venation as in male.

♀ GENITALIA. Seventh segment with a small ventral process. Eighth segment forming a complete ring, although the lateral margins are somewhat excised. Its

dorsal, apical margin is excised at the centre, the excision continuing basally as a narrow, median, semi-membranous groove. Ventral apical margin produced in a subgenital plate, covering the membranous ninth sternite. From beneath, this plate has a narrow, median, membranous groove running from near the base to the excised apex. Ninth tergite saddle-shaped, from above tapering from mid-way to a bilobed apex. Tenth segment with a pair of semi-membranous processes each carrying a small cercus. Bursa copulatrix very lightly sclerotized and obscure.

Length of fore wing ♂, 5 mm., ♀, 5.5 mm.

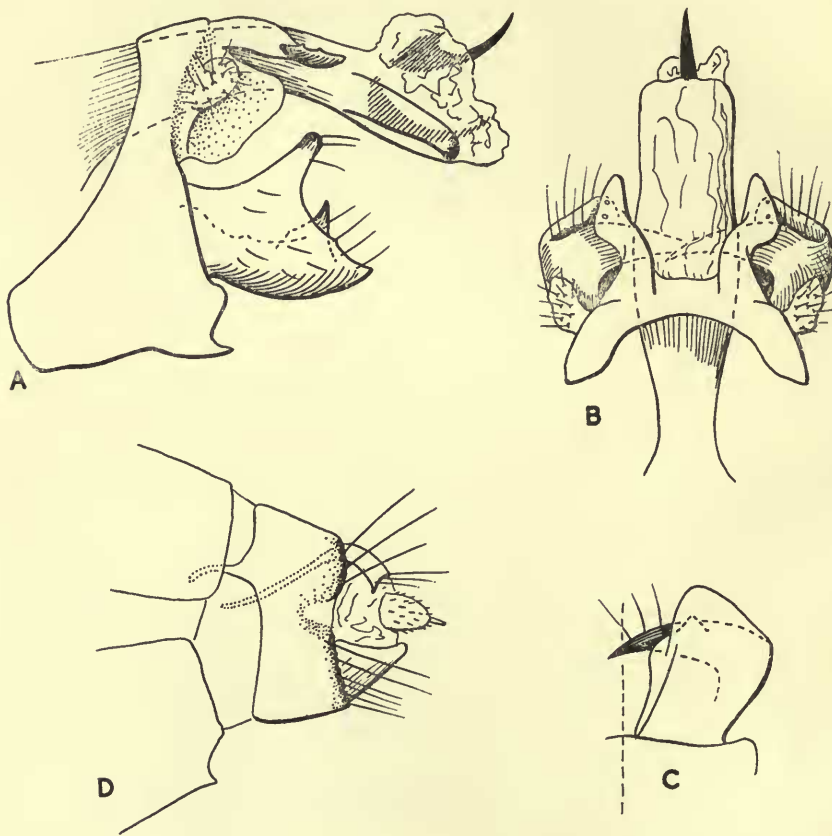


FIG. 2. *Chimarra cognata* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, dorsal; (C), ♂, right clasper, ventral; (D), ♀, lateral.

♂ holotype (3. x.) mounted as microscope preparations, ♀ allotype (3. x.) in 2% formaldehyde solution, abdomen mounted as microscope preparation. Paratypes in British Museum (Nat. Hist.) and Dept. of Research and Specialist Services, Salisbury, S. Rhodesia. *C. evoluta* (and another closely allied species being published in the *Ruwenzori Expedition Reports*, II) are related to *C. georgensis* Barnard in the obsolete  $R_1$  in the hind wing and the straight, white anastomosis in the fore wing.

They both differ from Barnard's species in male genitalia, the complete absence of  $R_1$  and the unforked condition of  $R_{2+3}$  and  $M_{1+2}$  in the hind wing. *C. evoluta* differs from the allied East African species in the longer and more slender spines arising from the ninth segment, the less produced lower lateral margins of the ninth segment and the relatively larger, more elongate claspers.

I was at first disposed to place this species and the East African one in Lestage's genus *Chimarrhafra* (type species, *C. georgensis* Barnard). Lestage's chief character, the obsolescence of  $R_1$  in the hind wing, is however not restricted to species from

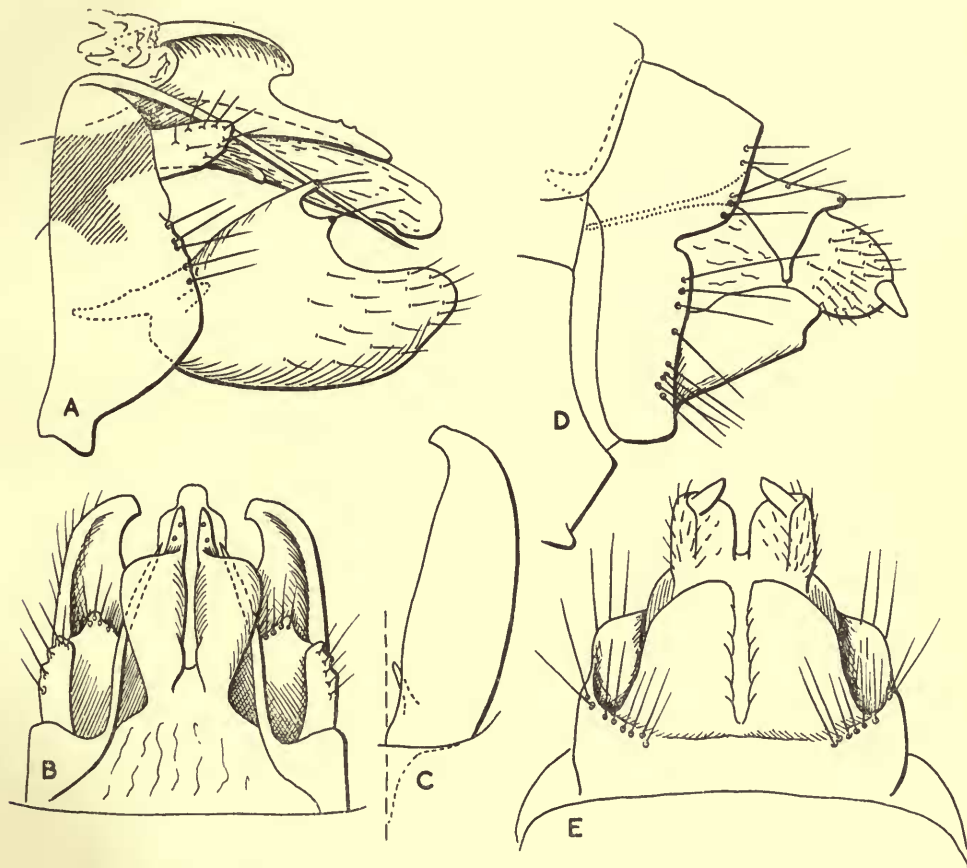


FIG. 3. *Chimarra evoluta* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, dorsal; (C), ♂, right clasper, ventral; (D), ♀, lateral; (E), ♀, ventral.

Africa, but occurs also in examples from Fiji, Solomons and Sarawak. The present species carries the reduction of the wing venation two stages further in the hind wing, in the unforked condition of  $R_{2+3}$  and  $M_{1+2}$ .  $R_{2+3}$  also occurs in the hind wing in other species of *Chimarra* (e.g., Australian spp.), but this reduction is not necessarily correlated with reduction of  $R_1$ . I am therefore in agreement with Ross (1956) that *Chimarrhafra* Lestage should be synonymized with *Chimarra*.

*Chimarra rhodesi* sp. n.

(Text-figs. 1, 4)

S. RHODESIA. Salisbury Experimental Station, light trap, 3-4.x.1956, 3 ♂, (C. N. Smithers).

♂ (in alcohol). Head fuscous, occipital warts pale, antennae and palpi fuscous. Thorax fuscous, warts pale. Legs pale fuscous, femora paler than tibiae. Spurs 1.4.4. Abdomen ochraceous, with fuscous genitalia. Wings medium fuscous, with sparse fuscous pubescence. Shape more elongate than in *evoluta*, venation of the typical *Chimarra* pattern.

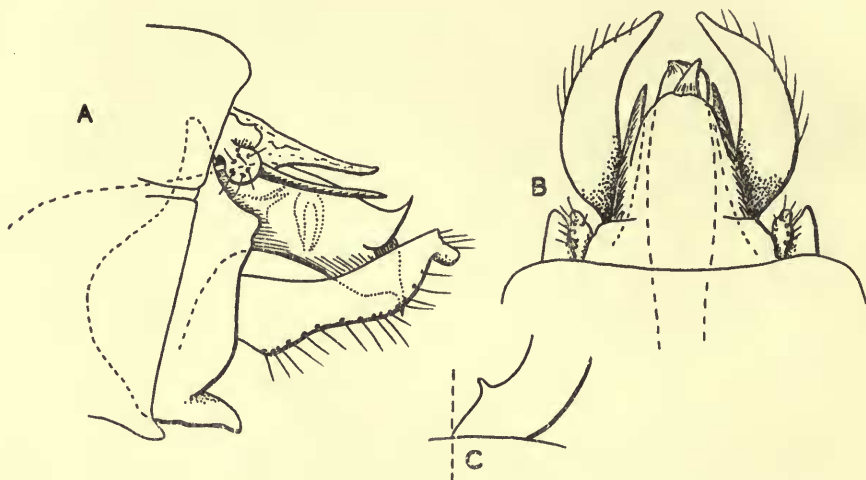


FIG. 4. *Chimarra rhodesi* sp. n. ♂ Genitalia. (A), lateral; (B), dorsal; (C), base of right clasper, ventral.

♂ GENITALIA. Eighth segment rather more sclerotized than basal segments, sternite with a small ventral process. Ninth segment more or less membranous dorsally, with a strong, short ventral process. Tenth segment with the median lobe membranous, lateral lobes blackish, spiniform, their bases attached to the ninth segment. Cercus short, rounded, arising from a thin, plate-like base. Aedeagus terminating in two hooks, the dorsal one directed upwards, the ventral downwards. Within the aedeagus can be seen two pairs of small, slender, curved spines. Clasper robust, in side view somewhat constricted about mid-way, apex tapering to an angled finger. From above, the clasper is incurved, stout, tapering to the apex, a small inner projection near the base.

Length of fore wing, 5 mm.

♂ holotype mounted as microscope preparations. Paratypes in British Museum (Nat. Hist.) and in Dept. of Research and Specialist Services, Salisbury, S. Rhodesia. This species is not closely related to any African *Chimarra* known to me. It perhaps comes nearest to *C. elga* Mosely. Both have processes to the eighth and ninth sternites and the claspers are somewhat similar in shape. The clasper in *rhodesi* is



more abruptly angled at the apex and more constricted mid-way. The lateral spiniform lobes of the tenth segment are straight, not upcurved, and the armature of the aedeagus is different. Moreover the head and thorax of *C. elga* are orange.

Family POLYCENTROPODIDAE

*Nyctiophylax africanus* sp. n.

(Text-fig. 5)

UGANDA. Jinja, at light, ix-x. 1954, 1 ♂, 3 ♀ (*P. S. Corbet*).

♂ (in alcohol). Head pale fuscous, with fuscous pubescence. Antennae ochraceous, finely annulated with fuscous. Palpi ochraceous. Thorax fuscous above, ochraceous beneath, legs ochraceous with fine fuscous pubescence. Wings brownish, with dense fuscous pubescence. Venation much as in *N. orientalis* Marlier, cell  $M_3$  in the fore wing and cell  $R_4$  in the hind wing sessile. Abdomen reddish ochraceous.

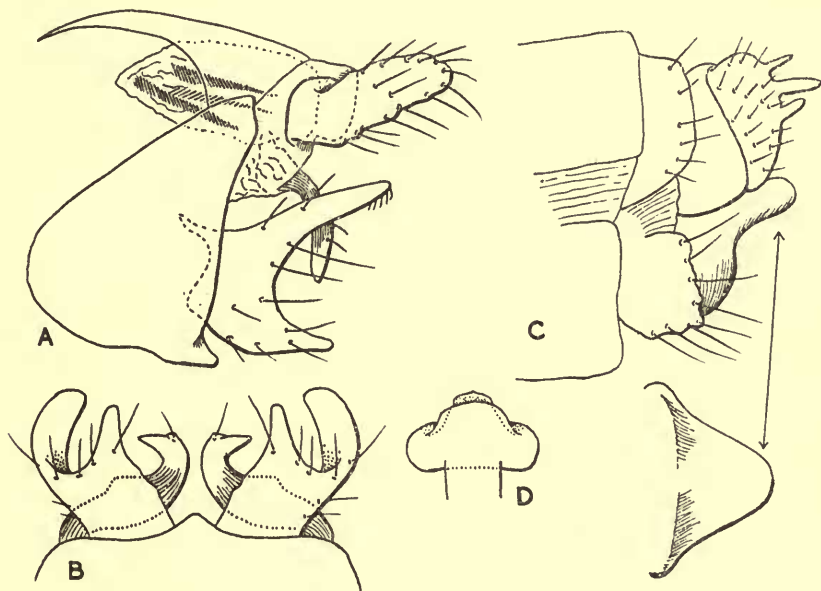


FIG. 5. *Nyctiophylax africanus* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, claspers and hooks of tenth segment, ventral; (C), ♀, lateral, and apex of subgenital plate, ventral; (D), ♀, bursa copulatrix, ventral.

♂ GENITALIA. Eighth tergite overlapping the ninth and tenth, the centre of its apical margin produced in a small rounded lobe. Upper part of ninth segment either membranous or fused with tenth, the centre of the ventral margin produced in a small triangular process. Tenth segment represented by a pair of lightly chitinized plates bearing the cerci, the lower angles of the plates produced downwards

and outwards in strong hooks, lying beneath the aedeagus. Cerci moderately elongate, fringed. Aedeagus with its dorsal surface lightly sclerotized, forming a saddle-shaped structure covering a mass of membrane within which are enclosed three pairs of straight spines. Clasper widely excised at its apex, from the side appearing as two divergent branches. From beneath, the upper branch curls inward, broad and spatulate, the lower branch slender acute.

♀ GENITALIA. Eighth sternite with a pair of quadrate lobes, their margins fringed with setae. Subgenital plate roughly triangular in ventral view, sides slightly sinuous, apex rounded; in side view it is deep at its base, then narrowed to a digitate apex, which reaches almost to apex of abdomen. Bursa copulatrix as shown. Tenth segment with three pairs of short finger-like processes.

Length of fore wing, 4 mm.

♂ holotype, ♀ allotype in 2% formaldehyde solution, one pair of ♂ wings, ♂ and ♀ abdomens mounted as microscope preparations. This species differs from both *N. occidentalis* Ulmer and *N. orientalis* Marlier in the deeply bifid clasper of the male and from the former also in the spines of the tenth segment being stouter and down-curved.

***Dipseudopsis capensis* Walker**

KENYA. Nzoia R., Lwamba Ferry, 19-20.iv.1956, 1 ♂ (*P. S. Corbet*).

TANGANYIKA. L. Victoria, Mwanza Pier, 11-13.viii.1956, 36 ♂, 4 ♀ (*P. S. Corbet*).

Widely distributed in Africa.

***Dipseudopsis noricis* Mosely**

GOLD COAST. Volta R., Senchi, 31.vii-2.viii.1950, 19 ♂, 20 ♀; Yeji, 14.x.1950, 2 ♂, 1 ♀ (*L. Berner*). Dayi R., Kpandu-Hohoe Rd., 17.viii.1950, 1 ♂ (*L. Berner*).

Previous distribution. Gold Coast.

***Dipseudopsis njalana* Ulmer**

GOLD COAST. Afram R., Mankrong, 13.ix.1950, 1 ♂ (*L. Berner*).

Previous distribution. Sierra Leone.

Family HYDROPSYCHIDAE

Subfamily Hydropsychinae

***Cheumatopsyche falcifera* Ulmer**

(Text-fig. 6)

UGANDA. Jinja, at light, 31.xii.1955-24.v.1956, 6 ♂ (*P. S. Corbet*).

I was at first inclined to label these specimens as *C. natalensis* (Barnard) but as they also showed some resemblance to Ulmer's figures of *falcifera* I made a genitalia preparation of the example labelled *type* in our collection. To my surprise it proved to be much nearer the Uganda examples than the figures (made from a dried example) suggested. The tenth segment from the side is more tapered and the terminal

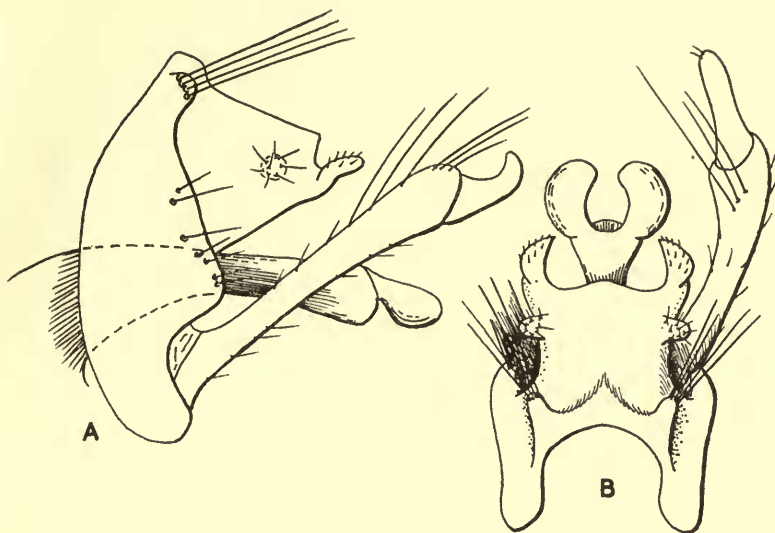


FIG. 6. *Cheumatopsyche falcifera* (Ulmer), ♂ Type. Genitalia. (A), lateral and (B), dorsal.

processes do not turn up so much. There is also a setiferous wart on each side. I am taking this opportunity of re-figuring the genitalia of *falcifera*. The specimen figured is one of three males listed from the Akaki Ravine, and Ulmer states that the type is one of these three. I therefore designate the specimen now figured (abdomen in small tube of glycerine) as the male *Lectotype*. *C. natalensis* (Barnard) now seems even more closely related to *C. falcifera* (Ulmer) and it must be left to South African entomologists to re-examine the type and decide whether it is truly distinct.

***Cheumatopsyche uncata* sp. n.**

(Text-fig. 7)

UGANDA. Albert Nile, Pakwach, 29.iv.1956, 3 ♂, 4 ♀ (*P. S. Corbet*).

(In alcohol). General colour ochraceous, wings denuded.

♂ GENITALIA. Ninth tergite with apical margin produced in two small, rounded lobes. Tenth segment from the side triangular, upper margin gently convex. Near the apex on each side is an upwardly and basally directed acute hook, and basad of it is a low, setiferous wart. From above, the tenth segment is subquadrate, its apical margin produced centrally in a triangle with rounded apex. Sides of the tenth segment a little convex, apical hooks not conspicuous. Aedeagus terminating in a pair of incurved, convex lobes. Basal segment of clasper slender at its base, dilating to a clavate apex. Terminal segment short and triangular from the side, tapering more gradually to a rounded apex in dorsal view.

♀ GENITALIA. Eighth sternite divided medially into two sclerites, ventro-caudal angles forming a wide convex sweep. Clasper-receptacle small, circular, ventro-



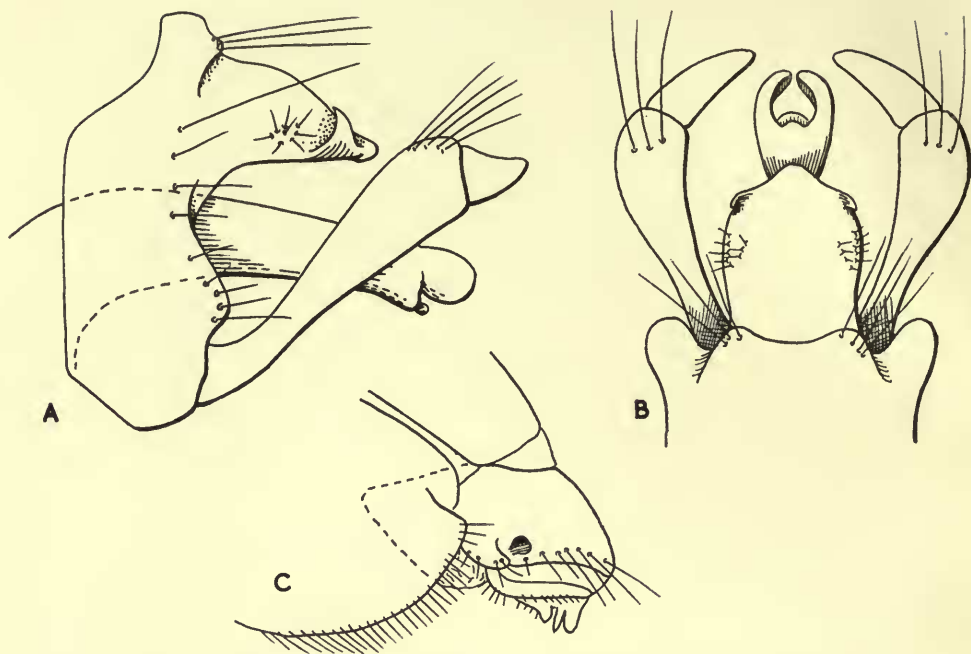


FIG. 7. *Cheumatopsyche uncata* sp. n. Genitalia. (A), ♂, lateral ; (B), ♂, dorsal ; (C), ♀, lateral.

caudal angle of ninth tergite produced in a small upcurved lobe below the clasper receptacle.

Length of fore wing, 7 mm.

♂ holotype, ♀ allotype in 2% formaldehyde solution, each with abdomen mounted as a microscope preparation ; paratypes in British Museum (Nat. Hist.). The shape of the tenth segment of the male, with its recurved apical hooks distinguishes this species from any other African *Cheumatopsyche* known to me.

#### *Cheumatopsyche urema* Mosely

UGANDA. L. Victoria, Kagera Bay, 12.v.1954, 1 ♂, 1 ♀ (*N. E. Hickin*) ; Jinja, 5.v.1954, 1 ♂ (*N. E. Hickin*).

Previous distribution. Kenya, Meru.

There are slight differences in the male genitalia compared with the type but I do not consider them to be of specific importance. The female is referred here with some doubt.

#### *Cheumatopsyche copiosa* Kimmins

GOLD COAST. Volta R., Senchi, 31.vii.1950, 3 ♂, 1 ♀ (*L. Berner*).

Previous distribution. Uganda.

*Cheumatopsyche afra* Mosely

TANGANYIKA. L. Tanganyika, Kigoma, 16.20.viii.1956, 19 ♂, 8 ♀ (*P. S. Corbet*).  
Previous distribution. Sierra Leone.

*Cheumatopsyche digitata* Mosely

UGANDA. Entebbe, 28.30.iii.1956, 4 ♂, 12 ♀ (*P. S. Corbet*).  
Previous distribution. Tanganyika.

Subfamily Oestropsinae (= Macronematinae)

*Phanostoma senegalense* Brauer

UGANDA. Butiaba district, iii.1954 ; numerous examples (*P. S. Corbet*) ; Jinja, 3.iii.1954, 2.28.v.1954, ix-x.1954, numerous examples (*P. S. Corbet*, *N. E. Hickin*) ; Ripon Falls, 27.v.1954, numerous examples, (*N. E. Hickin*).

GOLD COAST. Volta R., Senchi, 1.viii.1950, 4 ♂ (*L. Berner*).

Widely distributed in Africa.

*Polymorphanisus bipunctatus* Brauer

KENYA. Nzoia R., Lwamba Ferry, 19-20.iv.1956, 2 ♀ (*P. S. Corbet*).

Widely distributed in Africa.

*Polymorphanisus ? angustipennis* Ulmer

GOLD COAST. Volta R., Yeji, 14.x.1950, 1 ♂ (*L. Berner*).

Previous distribution. Cameroons.

*Aethaloptera dispar* Brauer

UGANDA. Butiaba district, iii.1954, a number, (*P. S. Corbet*) ; Jinja, 3.iii.1954, 2.v-i.vi.1954, ix-x.1954, a number, (*P. S. Corbet*, *N. E. Hickin*) ; West Nile, near Laropi, 27-28.iv.1956, 9 ♂, 47 ♀ (*P. S. Corbet*).

TANGANYIKA. L. Victoria, Mwanza Pier, 11-13.viii.1956, 1 ♀ (*P. S. Corbet*).

GOLD COAST. Afram R., 13-14.ix.1950, 3 ♂, 2 ♀ ; Volta R., Yeji, 14.x.1950, 1 ♂ (*L. Berner*).

Widely distributed in Africa.

*Macronema capense*, var. *signatum* Walker

UGANDA. Kampala, Namogonga R., 4.vi.1954, 1 ♂ (*N. E. Hickin*).

DISTRIBUTION. Equatorial Africa.

*Macronema distinctum* Ulmer

GOLD COAST. Afram R., Mankrong, 14.ix.1950, 2 ♂ (*L. Berner*).

DISTRIBUTION. Equatorial Africa.

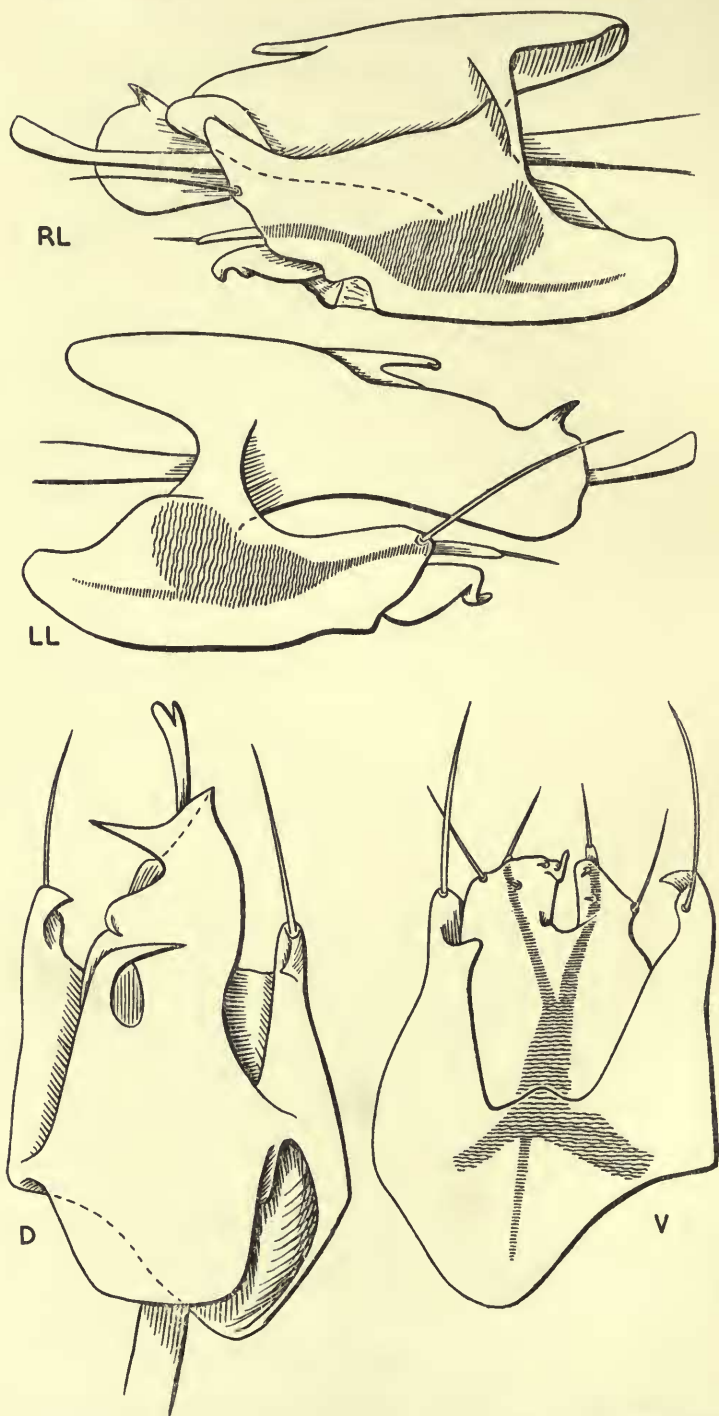


FIG. 8. *Orthotrichia straeleni* Jacquemart. ♂ Genitalia. (RL), right lateral ; (LL), left lateral ; (D), dorsal and (V), ventral.

***Macronema alienum* Ulmer**

GOLD COAST. Afram R., Mankrong, 13.x.1950, 2 ♂ (*L. Berner*).

Previous distribution. Sudan.

## Family HYDROPTILIDAE

***Orthotrichia straeleni* Jacquemart.**

(Text-fig. 8)

UGANDA. L. Victoria, Kagera Bay, 15.v.1954, 1 ♂ (*N. E. Hickin*) ; Albert Nile, Pakwach, 29.iv.1956, 2 ♂ (*P. S. Corbet*).

TANGANYIKA. L. Tanganyika, Kigoma, 16-20.viii.1956, 1 ♂ (*P. S. Corbet*).

(In alcohol). Head densely clothed with whitish hairs, a few fuscous hairs on face. Antenna with about thirty-eight segments, fuscous, with a short, pale patch at about two-thirds from base. Palpi with fuscous pubescence. Thorax with fuscous pubescence above, ochraceous beneath. Legs very pale fuscous. Wings with dark fuscous pubescence, a pale fuscous patch in pterostigmatic area of fore wing. A short row of black scales in costal area at base of fore wing. Abdomen with short processes to sixth and seventh sternites.

♂ GENITALIA. Completely asymmetric, as is usual in *Orthotrichia*. Ninth segment largely withdrawn within the eighth, with deep basal and apical lateral excisions. In side view, the apical angles of the lower part each bearing a stout bristle, the right-hand lobe more inwardly hooked than the left. To the upper part of the ninth segment is fused the tenth, forming an elongate, lightly sclerotized hood bearing three hooks, two directed to the right, one to the left. To the basal angles of this hood (only visible in a cleared example) is attached a transverse plate, the centre of whose apical margin is produced in a long, bifid process, each branch transparent and bearing an apical seta. Basal margin with a long slender apodeme. This structure lies beneath the aedeagus and may represent the fused processes of the tenth segment. Aedeagus long, slender, with a loosely attached spiniform titillator (not shown in figures, to avoid confusion). Claspers fused to form an asymmetric plate set within an excision of the ninth segment, excised at its centre, each half bearing a long seta. The left-hand clasper terminates in a short, sinuous process.

Length of fore wing 2 mm.

Since this paper was submitted for publication, I have seen a reprint of a paper by M. Jacquemart, in which this species appears under the name of *Orthotrichia straeleni* Jacquemart. I have therefore suppressed the name under which I was proposing to describe it but have left my description and figures.

***Orthotrichia aequatoriana* sp. n.**

(Text-fig. 9)

UGANDA. Jinja, 31.xii.1955, 1 ♂, 1 ♀ (*P. S. Corbet*).

(In alcohol). Antenna with thirty-four segments, pale ochraceous, with three patches of fuscous pubescence in the apical half. Head fuscous, vertex ochraceous

with fuscous warts, palpi pale fuscous. Anterior legs pale fuscous, clothed with broadened fuscous hairs, median and posterior legs ochraceous. Spurs 0.3.4. Pubescence of fore wing fuscous with paler areas, no black scales at base of subcosta in male. ♂ genitalia of the usual, complex type, asymmetric. Sixth ventral segment with a pointed process, seventh and eighth with tufts of hairs. Ninth segment long dorsally, with a pair of processes on the right-hand side apically, the upper short and claw-like, the lower long, slender, slightly upcurved. Ventral

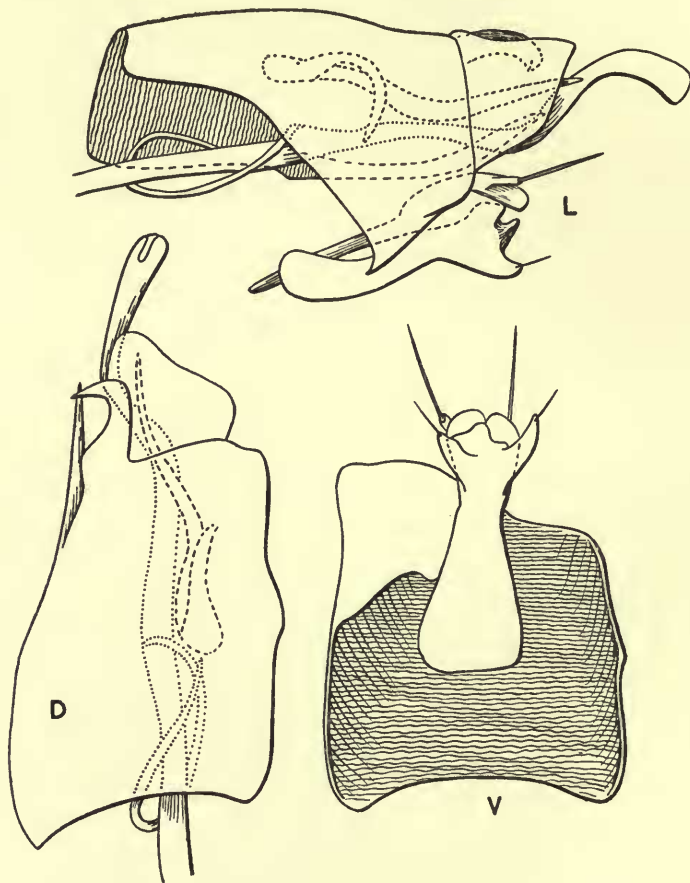


FIG. 9. *Orthotrichia aequatoriana* sp. n. ♂ Genitalia. (L), lateral; (D), dorsal; (V), ventral.

apical margin of the ninth segment irregular, its centre produced and with short, outspread apical branches; between and above them is an irregularly produced, blackened lobe. Above this lobe is a pair of rounded structures, each carrying a long bristle, their bases fused into a long, slender apodeme. It is possible that these structures may represent the claspers. Tenth segment membranous. Aedeagus long, slender, sinuous in its apical third and with a spiral sheath or titillator. Within



the ninth segment and above the aedeagus are two spines, fused basally, one short and claw-like, the other long, slender and sinuous.

Length of fore wing 2.5 mm.

♂ holotype mounted as microscope preparations. This species differs from *O. sanya* and *O. straeleni* in the absence of a row of black scales along the subcosta of the fore wing of the male and in the form of the male genitalia.

Family LEPTOCERIDAE

*Pseudoleptocerus corbeti* sp. n.

(Text-figs. 10, 11)

UGANDA. Jinja, 7.v-10.viii.1956, 28 ♂, 40 ♀ (*P. S. Corbet*).

(In alcohol). Head fuscous, with whitish and fuscous hairs. Basal segment of antenna fuscous above, paler beneath, remaining segments clothed with medium fuscous, scale-like hairs, joints dark fuscous, bases of segments whitish. These pale

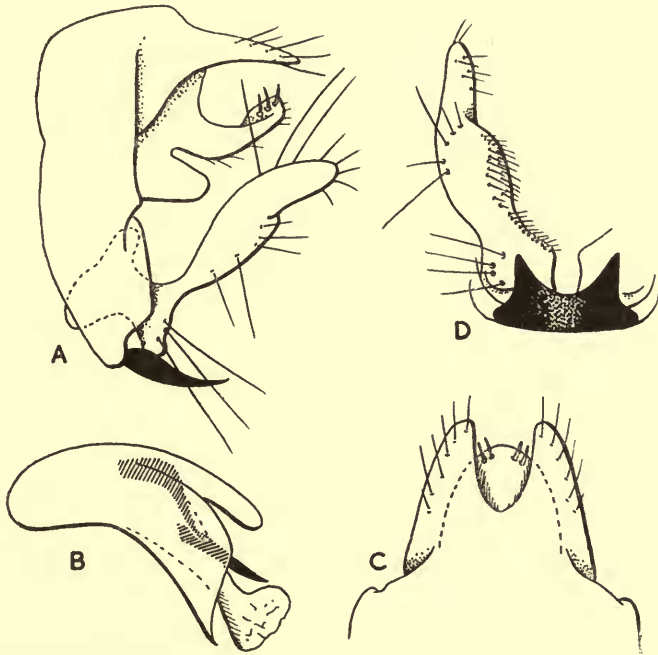


FIG. 10. *Pseudoleptocerus corbeti* sp. n. ♂ Genitalia. (A), lateral (aedeagus omitted); (B), aedeagus, lateral; (C), ninth and tenth segments, dorsal; (D), clasper and process of ninth segment, ventral.

annulations become less noticeable towards the apex of antenna. Palpi dark fuscous, maxillary with greyish white and some fuscous hairs. Prothorax and mesothorax fuscous, metathorax ochraceous with fuscous markings. Legs fuscous,

anterior tibia and tarsus annulated with whitish, posterior femur with pale bluish scales. Abdomen fuscous above, ochraceous beneath, ♂ genital segments brownish, a piceous bifid lobe on ninth sternite. Wings much as in *Ps. njalaensis* and *chirindensis*, anterior with hyaline areas, and clothed with blackish and iridescent pale bluish scales.

♂ GENITALIA. Dorsal apical margin of ninth segment produced in an excised hood, the U-shaped excision extending almost to the base of the hood, the lateral lobes broad, triangular, with rounded apices. From the side the lateral lobes are slender and slightly down-curved. Ventral margin of ninth sternite produced in a blackened, plate-like lobe, paler at its centre. In side view it is slender and acute, from beneath bifid, the acute angled separated by a wide excision. Tenth segment

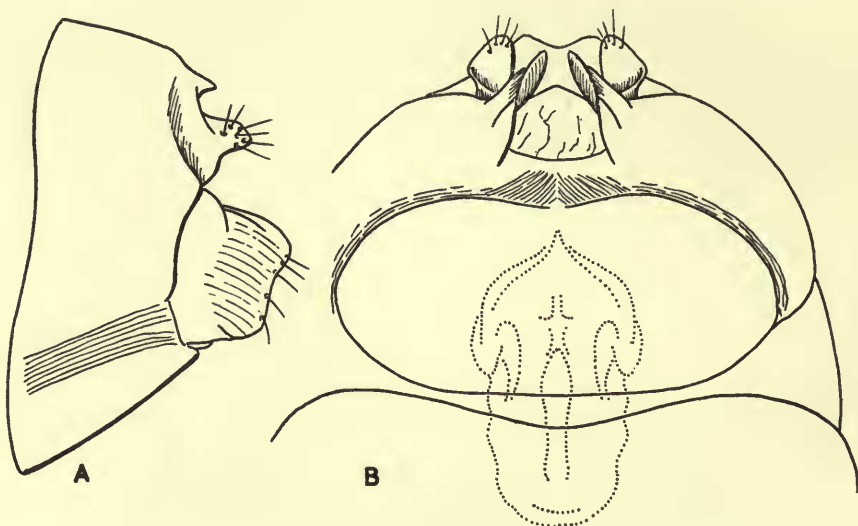


FIG. 11.—*Pseudoleptocerus corbeti* sp. n. ♀ Genitalia.  
(A), lateral; (B), ventral.

with a broad, rounded median lobe, armed with a few stout spines on each side of the apex. From the side, the median lobe appears as a slender curved process, whose apex is truncate. Lateral lobes of tenth segment thin, blunt, scarcely half as long as median lobe. Aedeagus enclosed in a curved basal sheath, whose upper margin projects as a quadrate lobe, the lower margin produced and acute. Aedeagus largely membranous, with two pairs of stout spines. Clasper stout at base, then much constricted in side view, dilating gradually to a digitate apex. From beneath it is also constricted near the base and again beyond the middle. Inner margin strongly spinose.

♀ GENITALIA. Eighth sternite with its apical margin widely and shallowly excised. Ninth and tenth segments fused, dorsal apical margin projecting in a short, excised lobe, which appears as a triangular process in side view. Below it is a pair of short processes (? cerci) armed with a few setae. Lateral gonapophyses short, moderately



deep in side view, apical margin slightly excised or sinuous. Above them in ventral view is a short triangular plate. Ninth sternite forming a broad ovate plate, its lateral margins more or less fused to the tergite.

Length of fore wing, ♂, 7.5 mm., ♀, 5.5 mm.

♂ holotype, ♀ allotype (8.viii.1956) mounted as microscope preparations, paratypes in 2% formaldehyde solution. In wing markings and in general structure of ♂ and ♀ genitalia this species resembles *njalaensis* Mosely and *chirindensis* Kimmins. One obvious distinguishing character is the bifid ventral process of the ninth sternite of the male. (In *chirindensis* an unpigmented median area of this process may simulate a forked process.) The median lobe of the tenth segment has the spines on each side of the apex (median in *njalaensis* and *chirindensis*). The clasper is more slender than in *njalaensis* and the apex less angulated than in *chirindensis* and is not outspread. In the female, the processes of the tenth segment are short and stout. In *njalaensis* they are also short, but more triangular in side view, and from beneath they are strongly transverse. In *chirindensis* these processes are much more slender, about three times as long as broad in side view. The lateral gonapophyses in *corbeti* are truncate or slightly excised apically in side view, not rounded as in *njalaensis* and *chirindensis*.

### *Pseudoleptocerus njalaensis* Mosely

GOLD COAST. Volta R., Senchi, 2.viii.1950, 1 ♂, 1 ♀, Yeji, 14.x.1950, 6 ♂, 2 ♀; Afram R., Mankrong, 14.ix.1950, 1 ♂ (*L. Berner*).

Previous distribution. Sierra Leone.

### *Triaenodes serrata* Ulmer

(Text-fig. 12)

1912, *Deutsch. Zentr.-Afrika-Exped.* 4 (Zool. 2) (6) : 110; *ibid.*, 1923, *Mitt. Münch. ent. Ges.* 13 : 20.

UGANDA. Jinja, 14.v-8.viii.1956, 2 ♂, 3 ♀, (*P. S. Corbet*).

I am taking this opportunity of describing the female genitalia and of re-figuring the male genitalia and also of drawing attention to a curious series of errors in connection with the description of the male genitalia. Originally it was stated that the tenth tergite was divided and that each half bore a long, curved spine. Ulmer subsequently (1923) corrected this, stating that the tenth tergite was not divided and that it bore only a single spine. This correction was overlooked by both Barnard (1934) and myself (1956) and we perpetuated the original error by referring to the paired spines of *serrata* in comparative notes. Through the kindness of Dr. Mannheims and Dr. Buchholz, of the Koenig Museum, Bonn, I have been able to examine Ulmer's type of *serrata*. To my surprise, I find that it does in fact bear *two* curved spines at the apex of the *undivided* tenth tergite! The lateral margins of the latter are more sclerotized and thus give the false impression of being divided. I am of the opinion that the type is probably aberrant in having two spines on the tenth tergite and that there should normally be only one, as appears to have been

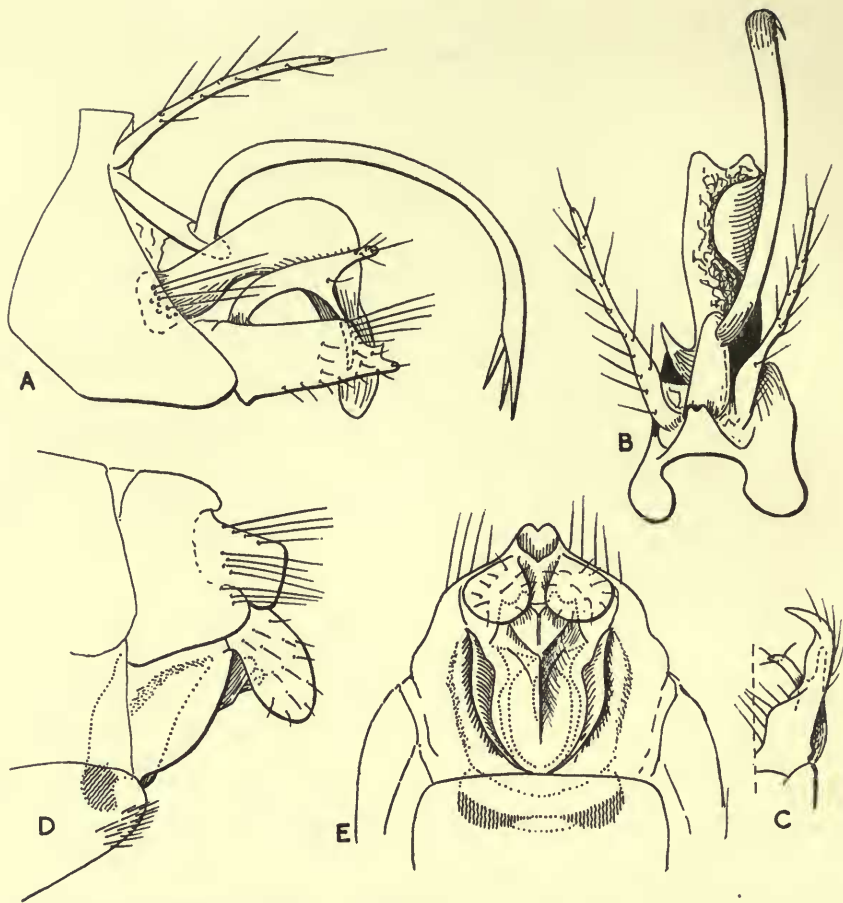


FIG. 12. *Triaenodes serrata* Ulmer. Genitalia. (A), ♂, lateral; (B), ♂, ninth and tenth segments and aedeagus, dorsal; (C), ♂, right clasper, ventral; (D), ♀, lateral; (E), ♀, ventral.

the case in the later specimens from which Ulmer corrected his original description. There are slight differences between the Uganda examples and Ulmer's type in the shape of the curved spine and of the clasper, but I do not consider them to be of specific importance.

Barnard (1934) when describing his *Adicella sicula* also remarks on its similarity to *Triaenodes serrata*. The similarity of genitalia, not only in the male, but also in the female *sicula* to those of the female now described as *serrata* causes one to wonder whether his *sicula* is not perhaps a *Triaenodes* with aberrant venation. This view is strengthened by the fact the two species of *Triaenodes* (*legona* and *wambana*) described by Mosely from Kenya and Ruwenzori both show a partly obsolete media in the fore wing, the base only being lacking.

♀ GENITALIA. Apical margin of eighth sternite straight, with a large patch of short bristles. Ninth tergite short, more or less fused to the tubular tenth segment.

Lateral gonapophyses elongate-oval, directed downwards and inwards. Ninth sternite moderately sclerotized, deeply excised at its centre, within which can be seen the internal structure, with a bilobed apex.

*Trianenodes ghana* sp. n.

(Text-figs. 13, 14)

GOLD COAST. Dayi R., Kpandu-Hohoe Rd., 17.viii.1950, 1 ♂ (*L. Berner*).

(In alcohol). Head ochraceous, eyes black, palpi ochraceous. Antenna with long basal segment bearing long silky hairs on its upper surface. Thorax, legs and abdomen ochraceous. Wings with sparse pale fuscous pubescence.

♂ GENITALIA. Ninth segment narrowed dorsally, the lower part about twice as long as upper and more sclerotized. Dorsal margin produced at its centre in a small, bifid, membranous process. Tenth segment long, spiniform, slightly down-curved. Cerci slender, nearly as long as tenth segment. Aedeagus large, down-

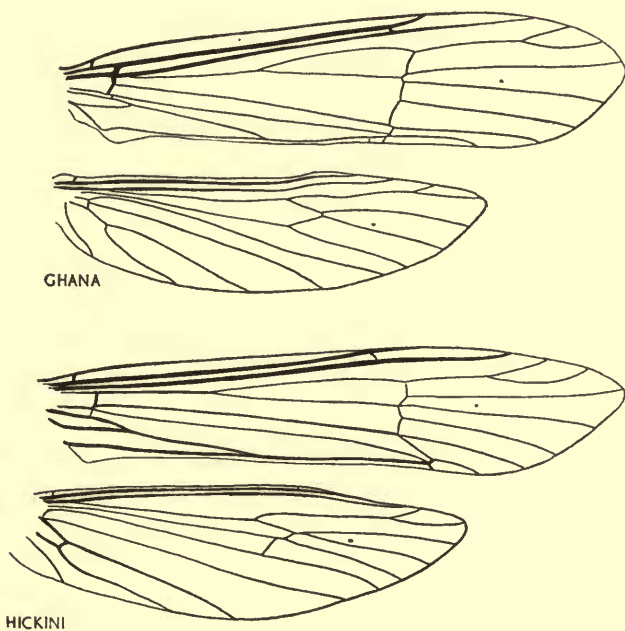


FIG. 13. Wings of *Trianenodes ghana* sp. n. and *T. hickini* sp. n.

curved, strongly sclerotized. It takes the form of a trough with asymmetric lateral margins, which are armed with strong spines, closely bunched on the left side, more spread out on the right. Beneath the apex is another bunch of strong spines. Claspers fused at their bases, rather complex. The main or basal part of each is quadrate in side view, with a finger-like process, armed with stout setae, arising from the upper margin towards the apex. Apical margin with an incurved apical hook and a smaller tooth. From beneath the basal part is triangular, the inner margin

of the upper finger-like process continuing as the inner margin of the clasper. From the upper surface of the clasper arises a bifid process, the upper branch digitate, directed tailward, the lower branch larger, flattened, directed downwards and inwards, apex acute.

Length of fore wing 7.5 mm.

♂ holotype in 2% formaldehyde solution, one pair of wings and genitalia mounted as microscope preparations. In structure of genitalia this species is related to *Triaenodes kimila* Mosely from Belgian Congo. It differs in the presence of strong



FIG. 14. *Triaenodes ghana* sp. n. ♂ Genitalia. (A), lateral; (B), tenth segment, dorsal; (C), left clasper, dorsal; (D), right clasper, ventral.

setae on the lateral margins and apex of the aedeagus and the bifid nature of the process of the clasper. There is no mention of any special tufts of silky hair on the basal segment of the antenna in *T. kimila*, and one must assume that they were either rubbed off or else naturally absent, since if they had been present, Mosely would certainly have placed the species in his genus *Triaenodella*.

The specific name of this species is that adopted by the former Gold Coast territories upon attaining self-governing status within the British Commonwealth.

***Triaenodes hickini* sp. n.**

(Text-figs. 13, 15)

KENYA. Kipkurere R., Timboroa Forest Reserve, Austins Bridge, 8,500 ft., emerged 20.x.1956, 1 ♂, 1.xi.1956, 2 ♂, 1 ♀, 7.xi.1956, 1 ♂, 1 ♀, 9.xi.1956, 2 ♀ (*N. E. Hickin*)



(In 2% formaldehyde solution). Head yellowish, fuscous above, antenna fulvous with fuscous annulations, basal segment of male elongate, dorsal surface with a pale longitudinal flap covering a tuft of hairs. Palpi pale fuscous with darker pubescence. Thorax yellowish, with faint fuscous streaks above, sides ochraceous. Legs very pale fuscous. Abdomen ochraceous, genitalia yellowish-brown. Wings with pale fuscous pubescence, with faint indications of transverse bands.

♂ GENITALIA. Ninth segment narrow dorsally, side-pieces triangular with rounded apices. Tenth segment with a pale trifold median lobe, the centre branch clavate and setose. Side lobes of tenth segment asymmetric, blade-like, the left lobe much longer than the right. Aedeagus arched, trough-like, apex directed downwards, excised and somewhat membranous. Clasper with a basal branch, the main part subtriangular from beneath, apex rounded, inner margin sinuous and armed with

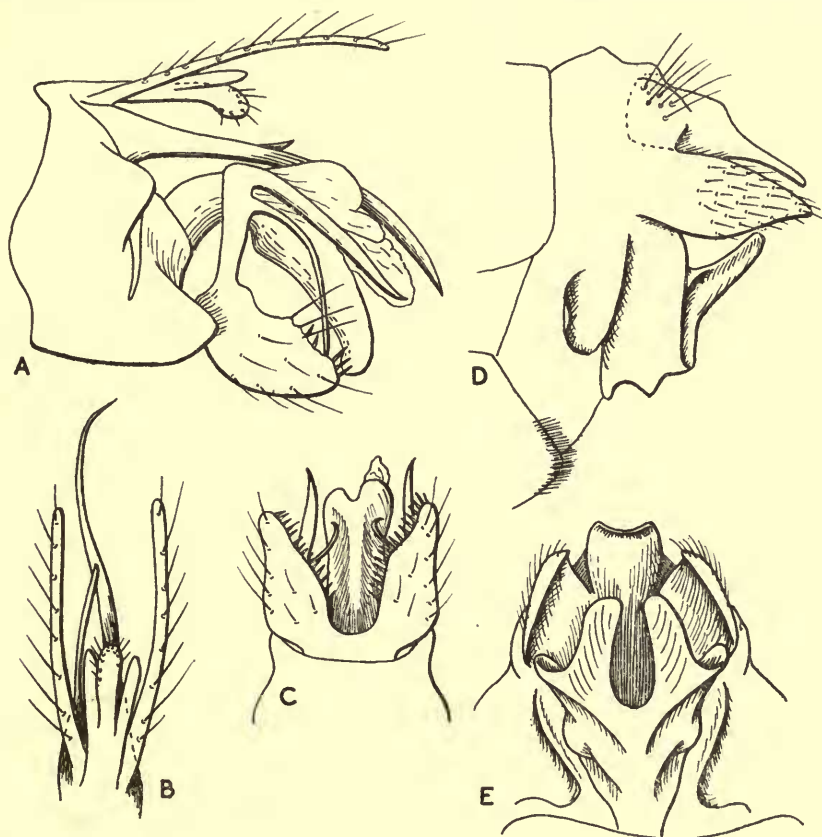


FIG. 15. *Triaenodes hickini* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, tenth segment, dorsal; (C), ♂, ventral; (D), ♀, lateral; (E), ♀, from beneath and behind.

short spines or teeth. The basal branch is directed upwards and then bent abruptly tailwards as a strong spine. Just below the angle is a second more slender spine, curving downwards.

♀ GENITALIA. Ninth tergite with a weak median carina. Lateral gonapophyses elongate, foliate, somewhat incurved and acute apically. Beneath them is a broad, bifid structure, deep in side view, the branches appearing as upwardly directed fingers. From beneath, these branches are separated by a deep excision. Tenth segment more or less fused to ninth, from the side moderately broad at its base (which carries a low setiferous wart), then narrowed to a slender digitate apex, slightly down-curved. From below it is spatulate, shallowly concave above.

Length of fore wing 10 mm.

♂ holotype in 2% formaldehyde solution, abdomen and one pair of wings mounted as microscope preparations. This species may be compared with *Triaenodes difformis* Mosely from Uganda. The median lobe of the tenth segment is shorter, view less elongate and with the basal branch stouter, more abruptly angled, its trifid, centre branch clavate. Clasper in ventral view more triangular, in lateral upper branch not clavate. *T. difformis* may have a longitudinal flap on the basal segment of the antenna but the specimen is in poor condition.

*Athripsodes jinjana* sp. n.

(Text-figs. 16, 17)

UGANDA. Jinja, 1956, 27 ♂, 22 ♀; L. Victoria, Bukakata, 13.i.1956, 2 ♀; Kampala, Port Bell, 6-7.iv.1956, 2 ♂, 1 ♀; Entebbe, 28-30.iii.1956, 2 ♂, 1 ♀, (P. S. Corbet).



FIG. 16. Wings of *Athripsodes jinjana* sp. n. ♂.

(In alcohol). Head ochraceous, warts fuscous, hairs whitish. Antenna ochraceous, annulated with dark fuscous. Maxillary palpi dark fuscous, with whitish hairs, labial pale fuscous. Thorax dull brownish, hairs whitish. Legs ochraceous, anterior femur ventrally, and most of anterior tibia and tarsus, pale fuscous. Abdomen whitish (? greenish in life), male genital segment yellowish brown. Fore wing with brownish pubescence, mottled with greyish, stigma dark brown.

Membrane pale smoky brown, with hyaline areas and, in male, venation much as in "*Homilia*" *lomia* Mosely.

♂ GENITALIA. Ninth segment narrowed dorsally, ventral apical margin not produced. Tenth segment forming a pair of long, curved spines, fused basally, apices divergent. Cerci slender, about two-thirds as long as tenth segment. Aedeagus short, abruptly angled downwards between the bases of claspers, where its apex can be seen in ventral view as a rounded lobe. Lateral margins of aedeagus produced upwards in vertical flanges. Claspers forming a pair of slender calipers arising from stout bases. From the side there is a triangular projection arising on the upper surface at the base, and beyond it is a stout, hooked process on the inner margin near the base.

♀ GENITALIA. Ninth sternite tapering towards its apex, apical margin straight, excised at its centre, the excision bordered by two rounded lobes, base of the excision

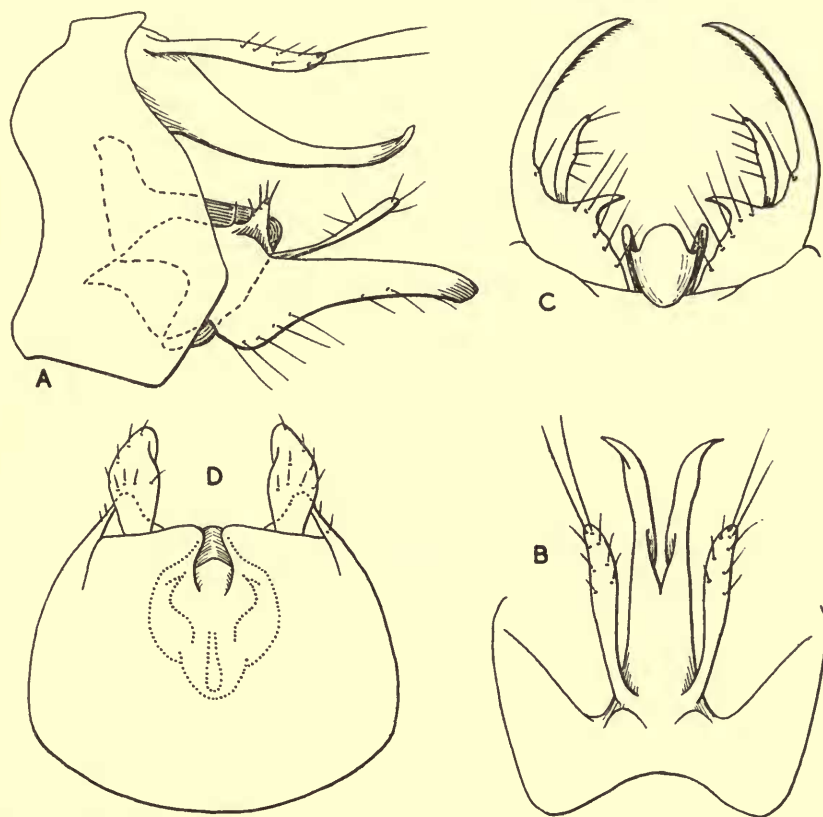


FIG. 17. *Athripsodes jinjana* sp. n. Genitalia. (A), ♂, lateral; (B), ninth and tenth segments, dorsal; (C), ♂, claspers and aedeagus, ventral; (D), ♀, ventral.

convex. Lateral gonapophyses dilated mid-way in ventral view, roundly quadrate in side view.

Length of fore wing ♂, 7 mm., ♀, 7.5 mm.



♂ holotype mounted as microscope preparations, ♀ allotype in 2% formaldehyde solution, with one pair of wings and abdomen mounted as microscope preparations, paratypes in 2% formaldehyde solution. This species can be grouped with *Athripsodes moselyi* Kimmins and *A. curvata* (Ulmer) (and also with "*Homilia*" *lomia* Mosely) on the structure of the male genitalia. It is perhaps closest to *A. moselyi*, from which it differs in the less elevated flanges of the aedeagus, stouter cerci, divergent spines of the tenth segment and hooked process on the inner, lower margin of clasper. The female may be distinguished by the blunter cerci, absence of the scabrous lobes in the excision of the ninth sternite and broader internal structure. The general similarity of the male genital structure to that of *Homilia lomia* is striking and strengthens the probability that the female of *lomia* will be found to have typical *Athripsodes* venation.

***Oecetis berneri* sp. n.**

(Text-figs. 18, 19)

GOLD COAST. Dayi R., Kpandu-Hohoe Rd., 17.viii.1950, 1 ♂ (*L. Berner*).

(In alcohol). Head ochraceous, antenna very pale fulvous with fine fuscous

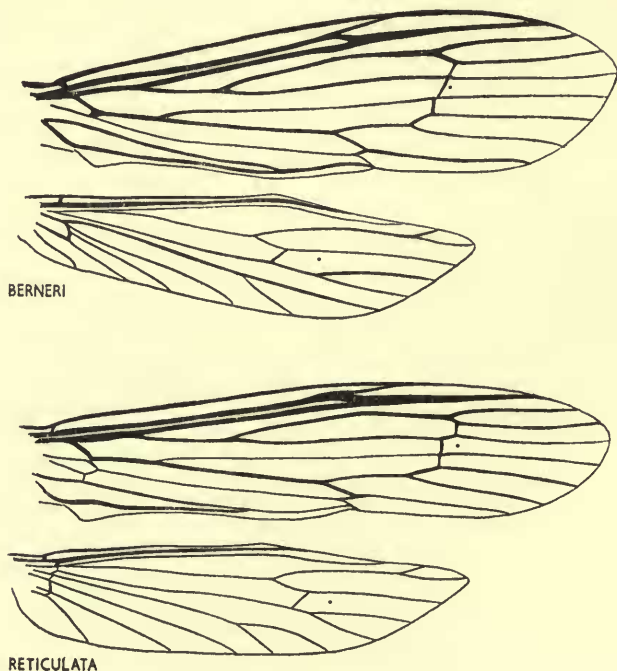


FIG. 18. Wings of *Oecetis berneri* sp. n. and *O. reticulatella* sp. n.

annulations, palpi pale fuscous. Thorax pale brownish above, ochraceous at sides, legs very pale fuscous. Wings hyaline, fore wing with fulvous pubescence, pale fuscous over cross-veins and forks. Venation as figured. Abdomen pale fuscous, tergites 5-8 with reticulate patches.

♂ GENITALIA. Ninth segment narrowed above. Tenth segment represented by two slender, asymmetric spines, down-curved, the left-hand spine in side view sinuously bent. Between their bases arises a pair of short, clavate appendages (? cerci), each with a tuft of setae at the base. Median lobe of tenth segment apparently obsolete. Aedeagus slender, bent downwards about mid-way, channelled on its upper surface, lateral margins of basal half expanded upwards in thin rounded plates. Clasper stout, bifid apically, upper branch arising about mid-way along dorsal surface, curving obliquely upward and tailward, slightly clavate. Main branch

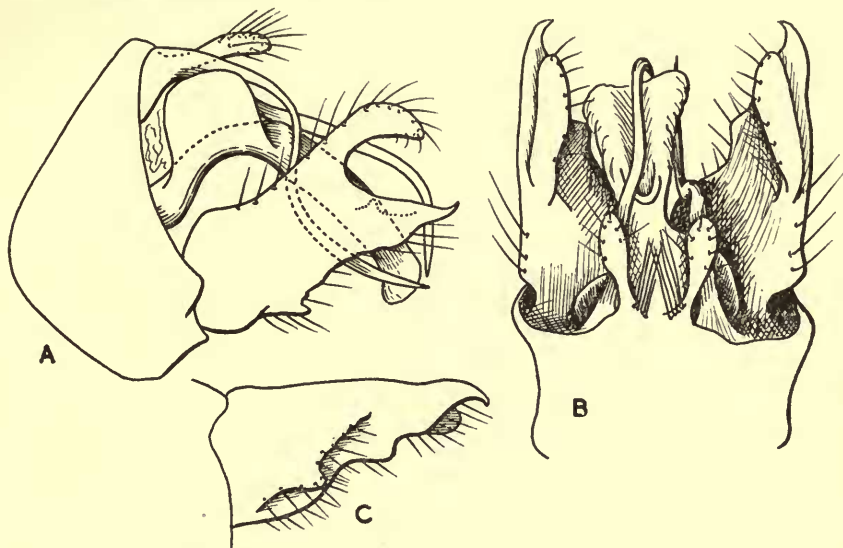


FIG. 19. *Oecetis berneri* sp. n. ♂ Genitalia. (A), lateral; (B), dorsal; (C), left clasper, ventral.

tapering to an acute apex, which is slightly hooked. In ventral view the clasper is narrowly triangular, inner margin forming a sinuous ridge and with a blunt triangular tooth on the lower surface.

Length of fore wing 4.5 mm.

♂ holotype in 2% formaldehyde solution, one pair of wings and abdomen mounted as microscope preparations. This species does not seem to have any very close relationship with the other African species of *Oecetis* having reticulate patches on the male tergites. The dilated lateral margins of the basal half of the aedeagus, the absence of the median lobe of the tenth segment and the structure of the clasper should make its recognition easy.

***Oecetis reticulatella* sp. n.**

(Text-figs. 18, 20)

GOLD COAST. Volta R., Yeji, 14.x.1950, 1 ♂ (*L. Berner*).

(In alcohol). Head fulvous with brownish pubescence. Antennae (incomplete) fulvous with fuscous pubescence. Palpi pale fuscous. Thorax fulvous, sides and

centre of mesonotum brownish. Legs fulvous. Wings hyaline, pubescence of anterior pale fuscous, slightly darker at cross-veins and arculus. Venation as figured. Abdomen ochraceous, tergites 5-8 in male with reticulate patches on each side.

♂ GENITALIA. Ninth segment short, apical margin from the side shallowly excised, from above also with a rounded median excision, the rounded lobes on each side possibly representing the cerci and lateral lobes of tenth segment, fused to the margin of the ninth. Median lobe forming a long, slender finger. Aedeagus large,

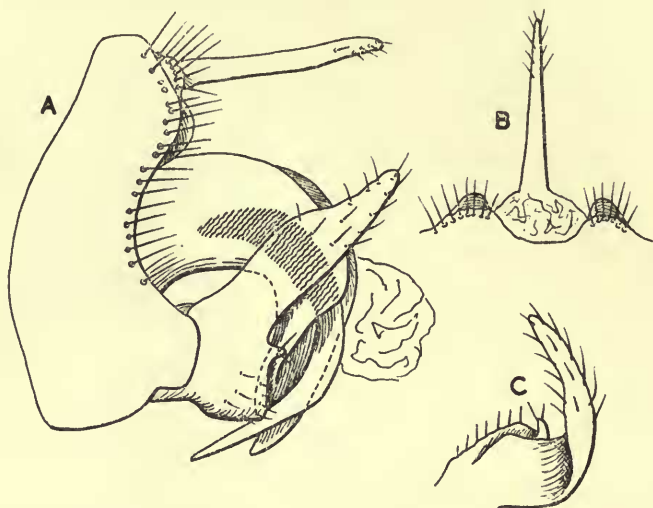


FIG. 20. *Oecetis reticulatella* sp. n. ♂ Genitalia. (A), lateral; (B), tenth segment, dorsal; (c), left clasper, dorsal.

arched downwards, forming an asymmetric trough enclosing a single, curved spine. Claspers stout, fused basally, upper apical angles extended in strong calipers.

Length of fore wing 5 mm.

♂ holotype in 2% formaldehyde solution, one pair of wings and abdomen mounted as microscope preparations. The presence of reticulate areas on the fifth to eighth tergites links this species with *O. choa* Mosely and *O. setifera* Ulmer. The tenth segment is however more reduced, since there appears to be no trace of the lateral lobes and the apices of the claspers are more acute.

### *Oecetis africana* sp. n.

(Text-figs. 21, 22)

UGANDA. Mengo, Entebbe, 28-30.iii.1956, 9 ♂, 5 ♀ (*P. S. Corbet*).

TANGANYIKA. L. Victoria, Mwanza Pier, 11-13.viii.1956, 2 ♂, 1 ♀ (*P. S. Corbet*).

(In alcohol). General colour light fuscous or dull ochraceous. Antenna annulated with piceous. Wings sparsely pubescent, fore wing with anastomosis, bases of discoidal and thyridial cells and arculus marked with fuscous. Abdomen with tergites six to eight with reticulate areas.

♂ GENITALIA. Ninth segment narrowed above, dorsal apical margin produced at centre in two small, semi-membranous fingers. Ventral apical margin triangularly produced. Cercus narrowed at base, foliate. Tenth segment forming two spatulate lobes, slender and spiniform from above. Aedeagus membranous, set in a down-

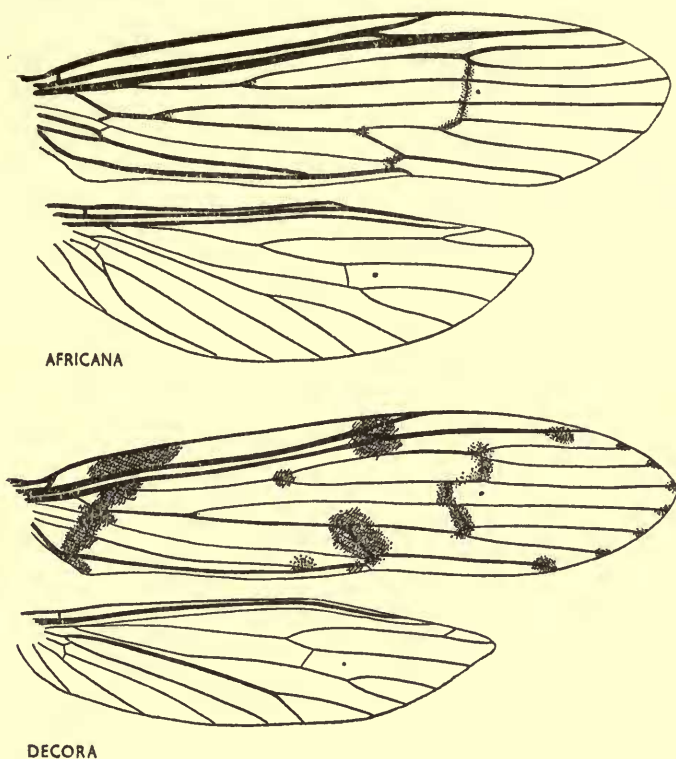


FIG. 21. Wings of *Oecetis africana* sp. n. and *O. decora* sp. n.

curved, sclerotized trough and with a membranous, extensile sheath arising near its base. This sheath terminates in a divergent, horn-like structure. Clasper short, subtriangular from beneath, apex hooked inward. From the side, the upper margin is strongly convex, apex concave.

♀ GENITALIA. Eighth sternite produced in a large, subgenital plate with a rounded slightly down-curved apex. Tenth segment fused to ninth, tubular, lower margin projecting beyond the upper, bilobed. On each side of the tenth segment is a large, low, setiferous wart. Lateral gonapophyses short, ovate from the side, tapering towards apex from beneath.

Length of fore wing 7 mm.

♂ holotype with wings and abdomen mounted as microscope preparations, ♀ allotype with abdomen mounted as microscope preparation and paratypes, all in 2% formaldehyde solution. This species is related to *O. aganda* Mosely and *O.*

*anomala* Marlier. All have the deeply bifid tenth segment in the male and the single extensile sheath of the aedeagus, terminating in divergent horns. (Mosely suggests that in *aganda* this process is normally paired, one being broken away, but I think

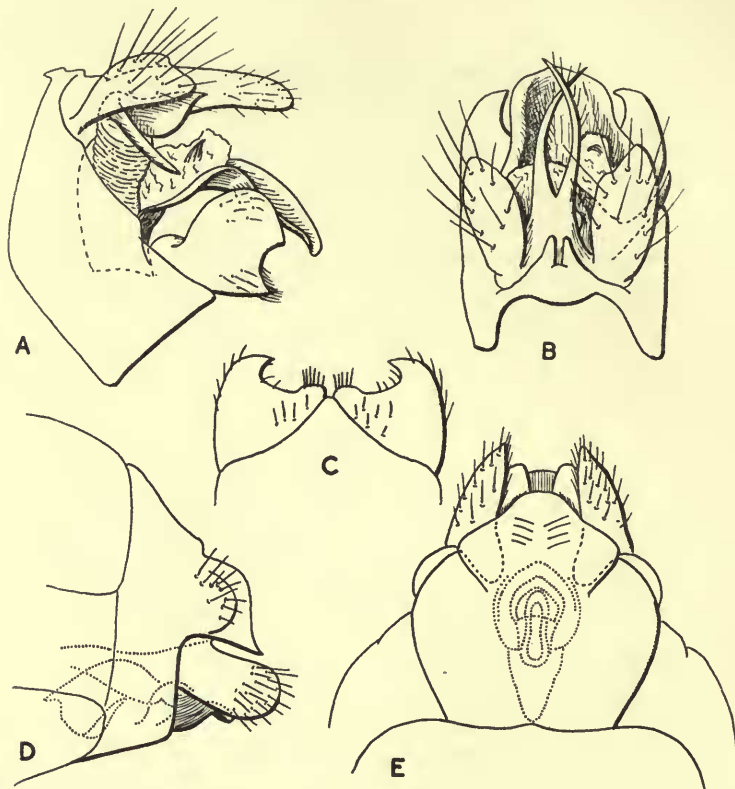


FIG. 22. *Oecetis africana* sp. n. Genitalia. (A), ♂, lateral ; (B), ♂, dorsal ; (C), ♂, claspers, ventral ; (D), ♀, lateral ; (E), ♀, ventral.

that this is a misinterpretation). *O. africana* differs from both the above species in the short claspers and broader, foliate cerci.

***Oecetis decora* sp. n.**

(Text-figs. 21, 23)

TANGANYIKA. L. Tanganyika, Kigoma, 16–20.viii.1956, numerous ♂ ♀ (*P. S. Corbet*).

(In alcohol). General colour ochraceous. Back of head pale fuscous, antenna annulated with fuscous. Dorsum of abdomen pale fuscous. Wings sparsely pubescent (? denuded), ochraceous and fuscous, membrane of fore wing strongly marked with fuscous as follows : An oblique, transverse band close to base from



costa to anal angle, interrupted at radial area; a small spot at base of discoidal cell; a large spot over cross-vein between  $Sc$  and  $R_1$ , extending to  $R_2$ ; a large spot over the base of cell  $Cu_{1a}$  and arculus; small spots at junction of  $1A$  and  $2A$ , at anastomosis and apices of veins. Venation as figured, cell  $R_2$  in hind wing present.

♂ GENITALIA. Ninth tergite produced at its centre in a small, bifid process. Cerci short, broad and ovate, closely appressed but not fused with the tenth segment,

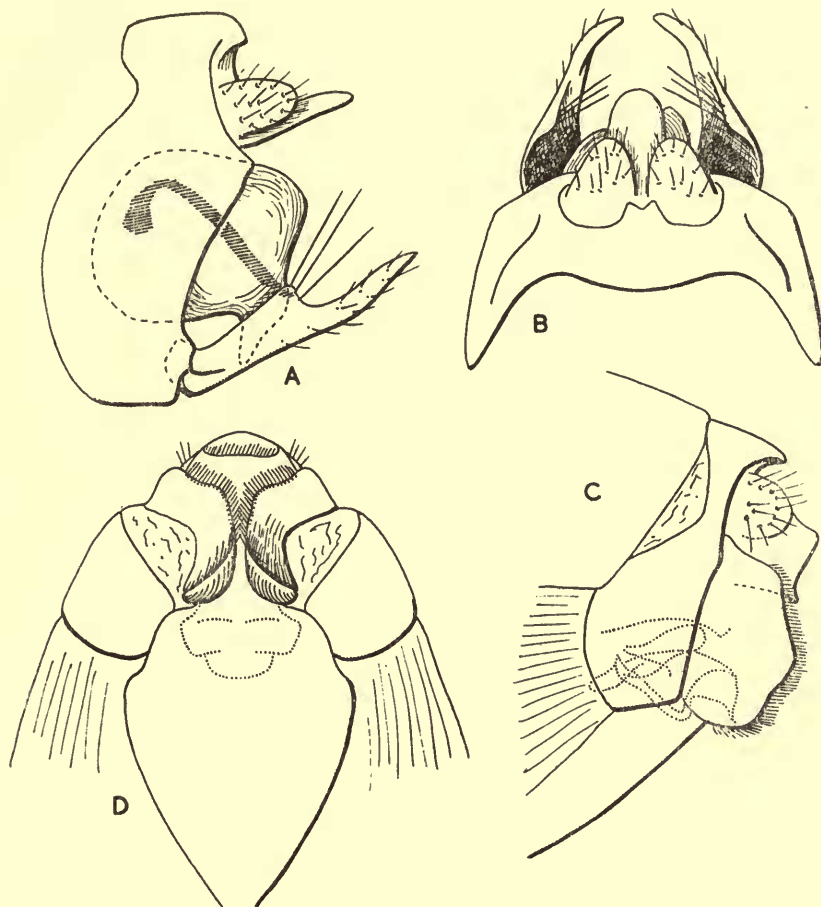


FIG. 23. *Oecetis decora* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, dorsal; (C), ♀, lateral; (D), ♀ ventral.

which is lightly sclerotized, about twice as long as cercus, narrow and truncate. Aedeagus large, globose, apex hooked downward, with a curved, internal spine. Claspers slender, incurved, upper margin humped about mid-way.

♀ GENITALIA. Ninth tergite produced at the centre of its apical margin in a narrow triangle. Tenth segment short, tubular, with a large setiferous wart on each side. Lateral gonapophyses of the ninth segment short, deep and concave,

apical margin sinuous, fringed. Eighth sternite (or subgenital plate) tapering to a narrow base, apex covered by the lateral gonapophyses.

Length of fore wing ♂, 6 mm.

♂ holotype mounted as microscope preparations, ♀ allotype in 2% formaldehyde solution, apex of abdomen mounted as microscope preparation, paratypes in 2% formaldehyde solution. In male genital structure this species closely resembles *O. maculata* Kimmins, differing in the shorter cerci, truncate tenth segment and more slender claspers. The pattern of the fore wing is very striking and entirely different from *O. maculata*. *O. hulstaerti* Návas and *O. janseni* Návas have strongly patterned wings but the arrangement of the spots and bands is different. The resemblance in male genital structure of this species and *O. maculata* to species of *Setodellina* gives rise to doubts whether the fusion of the cerci with the tenth segment to form a hood is a sufficiently good distinguishing character. In the present species the distinction is by no means clear-cut.

***Setodellina maculipennis* Ulmer**

GOLD COAST. Volta R., Senchi, 2.viii.1950, 2 ♂ (*L. Berner*).

Dayi R., Kpandu-Hohoe Rd., 17.viii.1950, 1 ♀ (*L. Berner*).

Previous distribution. Sudan, Uganda.

***Ptochoecetis africana* Ulmer**

GOLD COAST. Volta R., Yeji, 14.x.1950, 1 ♂, 1 ♀ (*L. Berner*).

Previous distribution. Sierra Leone.

***Setodes baccata* sp. n.**

(Text-figs. 24, 25)

UGANDA. Jinja, 9.v-15.viii.1956, 17 ♂, 7 ♀ (*P. S. Corbet*).

(In alcohol). Head piceous, with piceous and silvery hairs. Antenna fuscous, annulated with whitish in basal half. Palpi fuscous, with grey pubescence. Thorax dark fuscous above, ochraceous on sides. Legs fuscous, anterior tibia with dense blackish pubescence, base and apex of anterior tarsus with blackish pubescence, intermediate segments whitish. Abdomen ochraceous. Fore wing with dense brownish pubescence, decorated with five conspicuous, iridescent, pearly white patches of hairs, each ringed with dark brown. One is near the base of  $Cu_2$ , one on  $R_s$ , one near arculus and two near apex of discoidal cell. Venation fairly typical of genus, in fore wing cells  $R_2$  and  $M_1$  reaching anastomosis.

♂ GENITALIA. Ninth segment short, its dorsal apical margin slightly produced at its centre. Tenth segment fused to ninth, forming a hood, whose lower apical angles are extended in thin spatulate lobes, set on edge. Cerci flattened, triangular in dorsal view. Aedeagus short and stout, concealed, its apex curving downward



between the bases of the claspers. On the upper surface of the aedeagus near the base is a single blade-like process, directed tailward. Clasper trifid, the two outer branches widely divergent, the upper of these two curving inward, the lower directed tailward, broad in ventral view. The third branch arises from the inner surface at the base. It is triangular in side view, directed upward and tailward.

♀ GENITALIA. Eighth sternite extended in a subgenital plate, broad and convex at its base, hairy, tapering to a narrow rounded apex. Lateral gonapophyses of

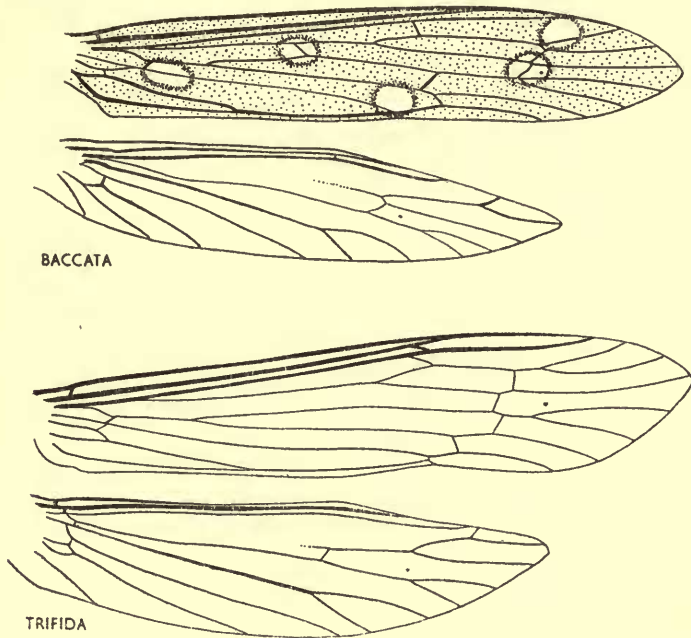


FIG. 24. Wings of *Setodes baccata* sp. n. and *S. trifida* sp. n.

ninth segment large, convex, upper apical angle rounded, heavily fringed with hairs, lower angle projecting in a small, rounded, spinose process. Tenth segment fused to ninth, hood-like, bifid.

Length of fore wing, ♂, 5-5.5 mm.

♂ holotype and ♀ allotype mounted as microscope preparations, paratypes in 2% formaldehyde solution. The pearly spots on the fore wing of this species should make it easily recognizable. The male genitalia are lightly sclerotized and with the rather concealed aedeagus, the male might easily be passed over as a female, as indeed did both Dr. Corbet and myself at first glance. It is quite distinct from the other described African species of *Setodes* and comes nearest to *S. excisa* Kimmins. The male genitalia also show considerable resemblance to those of *Hemileptocerus gregarius* Ulmer, from which it is separated by the narrower wings and pattern of the fore wings.

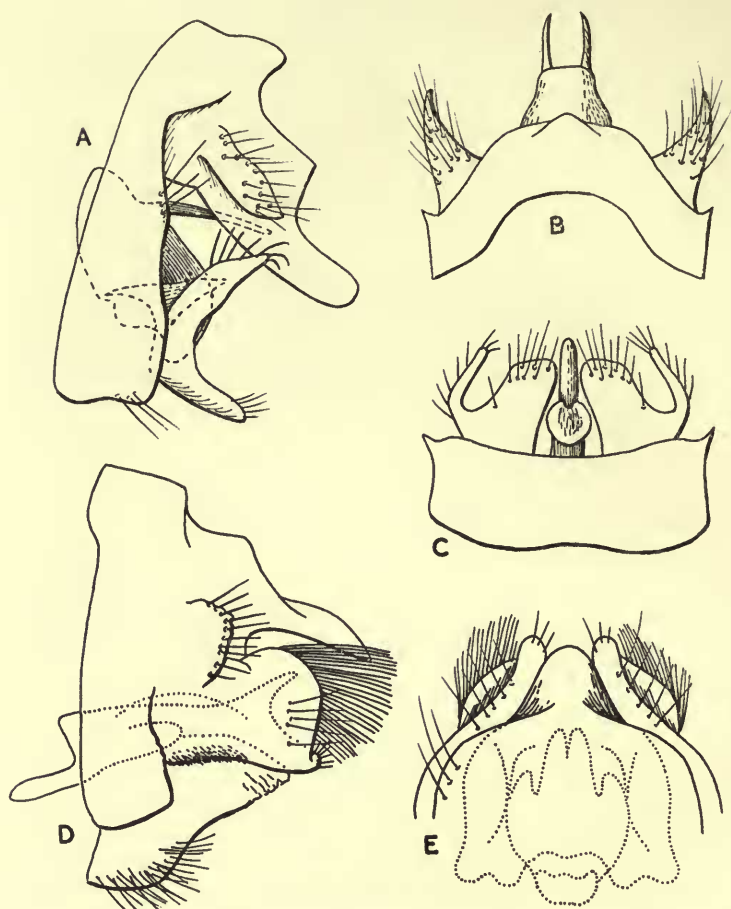


FIG. 25. *Setodes baccata* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, ninth and tenth segments, dorsal; (C), ♂, ninth segment, claspers and aedeagus, ventral; (D), ♀, lateral; (E), ♀, ventral.

***Setodes trifida* sp. n.**

(Text-figs. 24, 26)

KENYA. Nzoia R., Lwamba Ferry, 19-20.iv.1956, 24 ♂, 3 ♀ (*P. S. Corbet*).

(In alcohol). The specimens are much rubbed, but the general colour is ochraceous, eyes reddish black. Antenna rather broadly annulate with fuscous. The fore wing shows traces of fulvous pubescence and a suggestion of numerous hyaline spots. Venation much as in *S. squamosa* Mosely, but in the fore wing cells  $R_2$  and  $R_5 + M_{1+2}$  with shorter foot-stalks. In hind wing cell  $R_5 + M_{1+2}$  nearly as long as its foot-stalk.

♂ GENITALIA. Ninth segment very short, apical dorsal margin slightly produced in a shallow lobe at its centre, ventral margin not produced. Tenth segment fused to ninth, hooded, tapering to a bilobed apex, and with a setiferous wart on each side

at base. Aedegus sharply angled downwards, the deflected portion divided into two parallel, narrow lobes. Claspers with their fused bases closing most of the lower half of the ninth segment. From each half of the base arise three distinct branches, the lowest directed tailward, narrow from the side, broader from above, apex narrowed. The median branch is rather foliate, narrow at base and curved inward. From above, its inner margin is serrate and armed with bristles. Between the two median branches are a pair of short, setiferous fingers. The upper branch is long and slender, directed upwards on each side of the tenth segment.

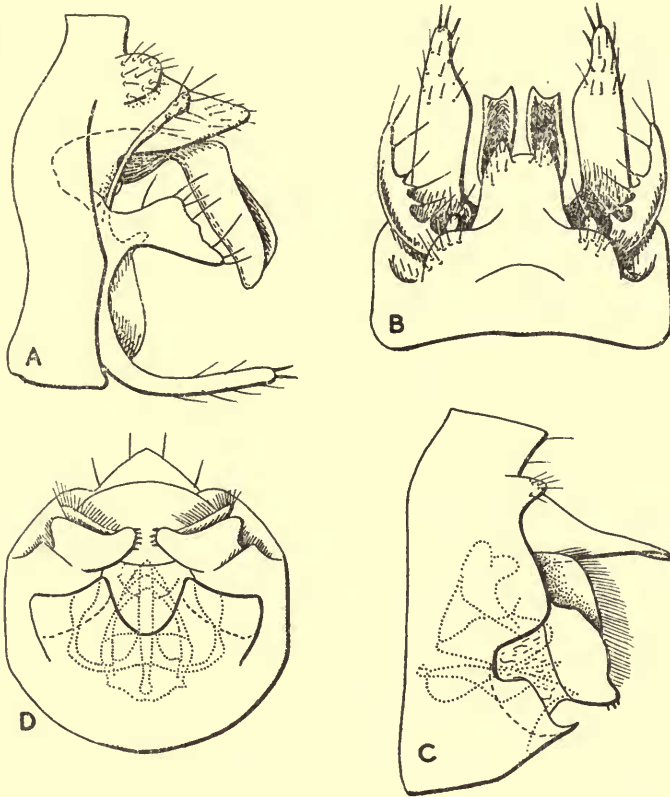


FIG. 26. *Setodes trifida* sp. n. Genitalia. (A), ♂, lateral; (B), ♂, dorsal; (C), ♀, lateral; (D), ♀, ventral.

♀ GENITALIA. Ninth segment forming a complete sclerotized ring. Dorsal apical margin triangularly produced. Tenth segment forming a broad, rounded plate, appearing as a narrow triangular projection in side view. At its base on each side is a small setiferous wart. Ventral margin of ninth segment with a U-shaped excision at its centre, between two triangular lobes. Lateral gonapophyses each in the shape of two overlapping narrow plates, joined at their lower angles, which are spiny. The inner plate is fringed with hairs.

Length of fore wing, ♂, 7.5 mm.

♂ holotype and ♀ allotype in 2% formaldehyde solution, abdomen of latter mounted as microscope preparation, ♂ paratype mounted as microscope preparation, others in 2% formaldehyde solution. The nearest African relative of this species is *S. squamosa* Mosely, from which it differs in the male in having three main branches of the claspers, and in the shorter tenth tergite without long spines. The female differs in the simple tenth tergite, the excised ninth sternite and the different form of the lateral gonapophyses.

***Trichosetodes lacustris* Kimmins**

*Trichosetodes lacustris* Kimmins, 1953, *Entomologist*, **86** : 278.

*Trichosetodes victoriana* Kimmins, 1956, *Trans. R. ent. Soc. Lond.* **108** : 139-140 (**Syn. nov.**).

Further material from Jinja, collected by Dr. Corbet, has shown variation in the number of spines on the outer branch of the tenth segment of the male (two, one or none, even differing on opposite sides of the same specimen) and in the degree of production of the inner apical angle of the clasper. The degree of variation brings *T. victoriana* within the limits of *T. lacustris* and *victoriana* must therefore be treated as a synonym.

Family LEPIDOSTOMATIDAE

***Pisulia pinheyi* sp. n.**

(Text-fig. 27)

S. RHODESIA. Chirinda Forest, xi. 1955, 1 ♂.

♂ (pinned). Eyes hairy. Head piceous on vertex, with a small ochraceous spot between the basal ocelli, face and palpi ochraceous. Antenna short, piceous. Thorax piceous above, ochraceous laterally and beneath. Legs ochraceous, with fuscous pubescence, inner apical spur of posterior tibia glabrous, slightly curved and acute. Abdomen fuscous, slightly paler beneath, anal appendages dull ochraceous. Wings fuscous, with fuscous pubescence, venation as figured.

♂ GENITALIA. Seventh sternite triangularly produced at its centre, apex rounded. Ninth segment narrowed above and below. Tenth segment divided into a median and two lateral lobes. Lateral lobes each comprising a digitate process, slightly down-curved, arising from a broadened base, which also carries a setiferous wart and another short process. From above, the digitate process is slightly clavate. The median lobe lies at a lower level between the lateral lobes. It is lightly sclerotized, tapering to an apex with a V-shaped excision. Aedeagus short, with an excised apex. Clasper trifid, the upper branch foliate, its outer lateral margin strongly upcurved and covered with long setae, lower margin longitudinally keeled. From above or below it tapers to a rounded apex. Median branch a little lower but about as long as upper branch, narrower in side view and with an acute apex. From beneath, moderately broad at base and apex, slightly constricted mid-way and obliquely rounded at apex. Lower branch not extending as far as other branches, cylindrical and with an apical tuft of long setae.

Length of fore wing, 6.5 mm.

♂ holotype (with one pair of wings mounted dry, abdomen in glycerine) presented by E. Pinhey, Esq., of the National Museum of S. Rhodesia. This species differs from *P. glabra* Marlier in venation and in male genitalia. In the fore wing the discoidal cell is relatively narrower, the thyridial cell more elongate and cell  $Cu_{1a}$  narrower. In genitalia the lateral lobes of the tenth segment are narrower and more arched in side view, the upper branch of the clasper is more dilated, the median branch differently formed in ventral view and the lower branch much shorter.

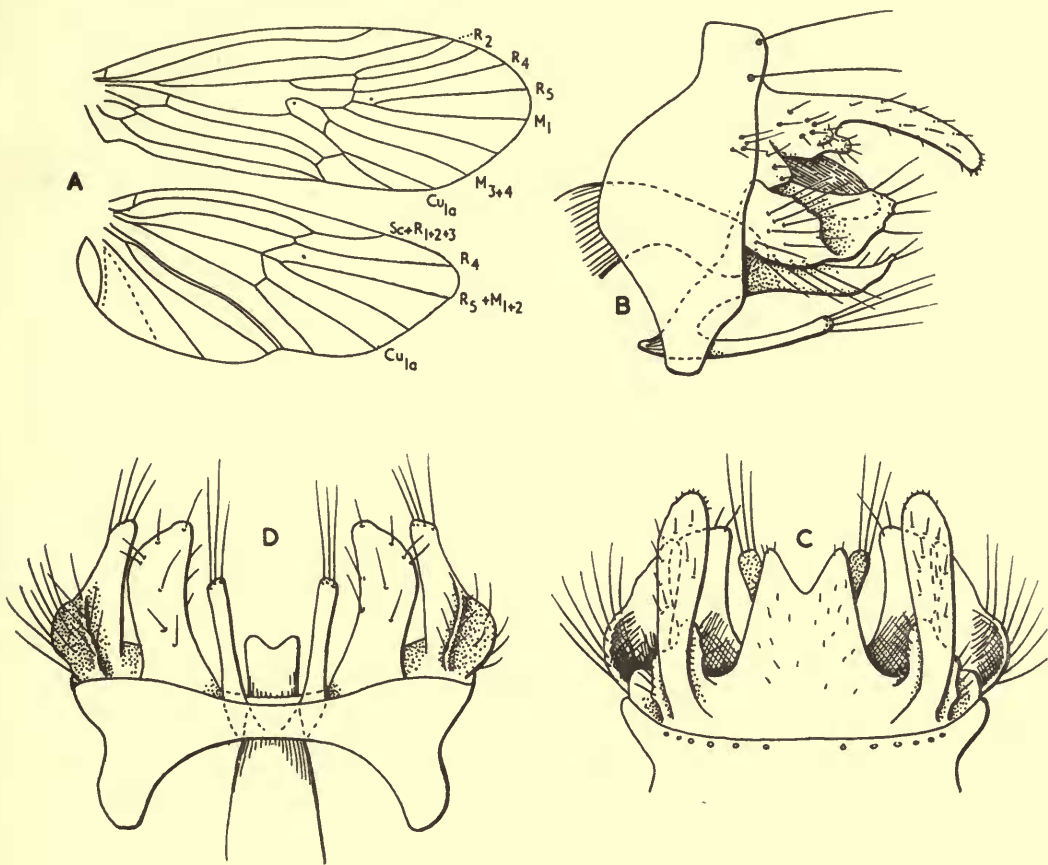


FIG. 27. *Pisulia pinheyi* sp. n. ♂ Wings (A) and genitalia. (B), lateral; (C), dorsal; (D), ventral.

I differ slightly from Dr. Marlier in my interpretation of the wing venation, with the result that I consider the forks to be  $R_2$ ,  $R_4$ ,  $M_1$  and  $Cu_{1a}$  in the fore wing (forks 1, 2, 3 and 5) and forks  $R_4$  and  $Cu_{1a}$  in the hind wing (forks 2 and 5). This difference arises from the probability that the facetic point is always between veins  $R_4$  and  $R_5$ , even if this involves the assumption that at times  $R_5$  doubles back and fuses with the anterior branch of  $M$  for a greater or lesser distance.

